

RECYCLED RUBBER PROCESSING AND PERFORMANCE ENHANCEMENT

ABSTRACT OF THE DISCLOSURE

A process for reclaiming sulfur-cured, vulcanized rubber by combining finely ground scrap vulcanized rubber within a specialized, twin-screw extruder capable of providing strong shearing and just-on-time mixing; adding a reclaiming agent to the extruder; and masticating the rubber scrap and reclaiming agent within the extruder until the rubber scrap is devulcanized. The present invention also discloses a unique composition of reclaiming agent, which preferably includes the following compounds: accelerators TBBS, ZMBT, MBT, and TMTM; activators zinc oxide and stearic acid; and zinc salts of fatty acids and sulfur. The reclaimed rubber is suitable for use in producing high-grade, rubber products without adding a binder, or for combining with fresh rubber compounds to produce high-specification rubber products.